

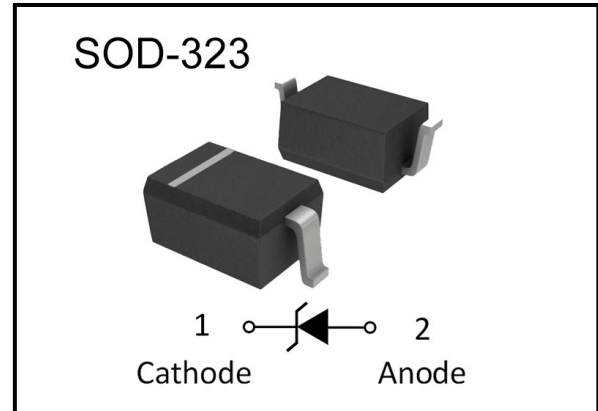
BZT52BxxS

Zener Diode

Features

- Low Zener Impedance
- Power Dissipation of 200mW
- High Stability and High Reliability

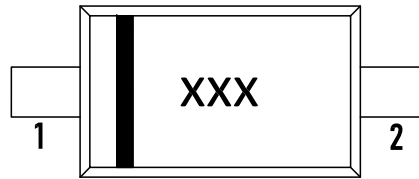
Package



Description

- Case: molded plastic
- Package: SOD-323 Plastic Package
- Polarity: Color band denotes cathode
- Epoxy UL: 94V-0

Marking



Ordering information

Order code	Package	Marking	Base qty	Deliverymode
BZT52BxxS	SOD-323	xxx	3K	Tape and reel

Maximum Ratings @T_A=25°C unless otherwise noted

Symbol	Parameter	Value	Unit
P _D	Power Dissipation	200 ⁽¹⁾	mW
V _F	Forward Voltage @I _F =10mA	0.9 ⁽²⁾	V
T _J	Junction temperature	150	°C
T _S	Storage temperature range	-55 to +150	°C

Notes: (1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²

(2) Short duration test pulse used to minimize self-heating effect



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Typical Performance Characteristics($T_A = 25^\circ\text{C}$, unless otherwise noted)

Device	Marking	Zener Voltage Range			Maximum Zener				Maximum		Typical Temperature coefficient		Test Current
					Impedance				Reverse	Current			
		$V_Z@I_{ZT}$			I_{ZT}	Z_{ZT}	$Z_{ZK}@I_{ZK}$	I_{ZK}	I_R	V_R	@ $I_{ZTC}=mV/^\circ\text{C}$		I_{ZTC}
		Nom.(V)	Min.(V)	Max.(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(Min)	(Max)	(mA)
BZT52B2V4S	2WX	2.4	2.35	2.45	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52B2V7S	2W1	2.7	2.65	2.75	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52B3V0S	2W2	3.0	2.94	3.06	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52B3V3S	2W3	3.3	3.23	3.37	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52B3V6S	2W4	3.6	3.53	3.67	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52B3V9S	2W5	3.9	3.82	3.98	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52B4V3S	2W6	4.3	4.21	4.39	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52B4V7S	2W7	4.7	4.61	4.79	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52B5V1S	2W8	5.1	5.00	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52B5V6S	2W9	5.6	5.49	5.71	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52B6V2S	2WA	6.2	6.08	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52B6V8S	2WB	6.8	6.66	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52B7V5S	2WC	7.5	7.35	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52B8V2S	2WD	8.2	8.04	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52B9V1S	2WE	9.1	8.92	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52B10S	2WF	10	9.80	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52B11S	2WG	11	10.78	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52B12S	2WH	12	11.76	12.24	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52B13S	2WI	13	12.74	13.26	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52B14S	2WY	14	13.72	14.28	5	30	170	1.0	0.1	10.5	8.1	12.0	5
BZT52B15S	2WJ	15	14.70	15.30	5	30	200	1.0	0.2	10.5	9.2	13.0	5
BZT52B16S	2WK	16	15.68	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52B18S	2WL	18	17.64	18.36	5	45	225	1.0	0.2	12.6	12.4	16.0	5
BZT52B20S	2WM	20	19.60	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52B22S	2WN	22	21.56	22.44	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52B24S	2WO	24	23.52	24.48	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52B27S	2WP	27	26.46	27.54	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52B30S	2WQ	30	29.40	30.60	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52B33S	2WR	33	32.34	33.66	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52B36S	2WS	36	35.28	36.72	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52B39S	2WT	39	38.22	39.78	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52B43S	2WU	43	41.16	43.84	2	100	700	1.0	0.1	32.0	10.0	12.0	5



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Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Fig 1:Breakdown characteristics (at $T_J=\text{constant}$ (pulsed))

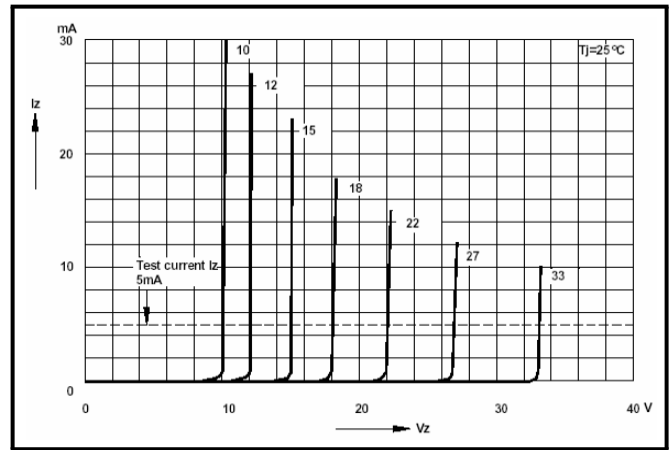
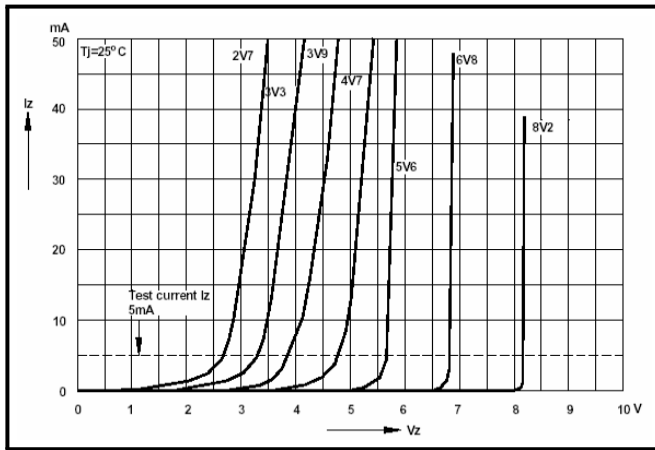
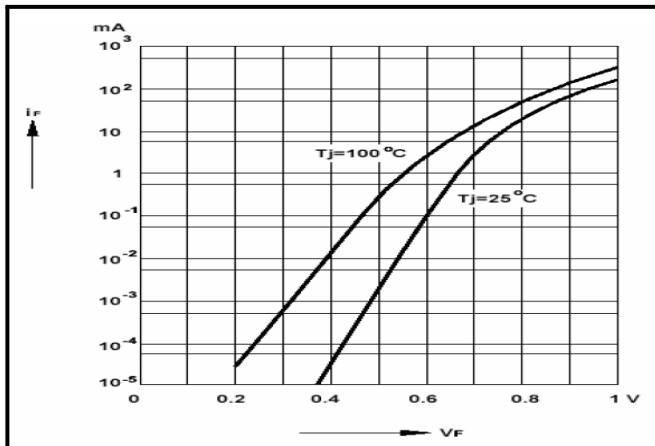


Fig 2:Forward characteristics

Fig 3:Admissible power dissipation versus ambient



temperature

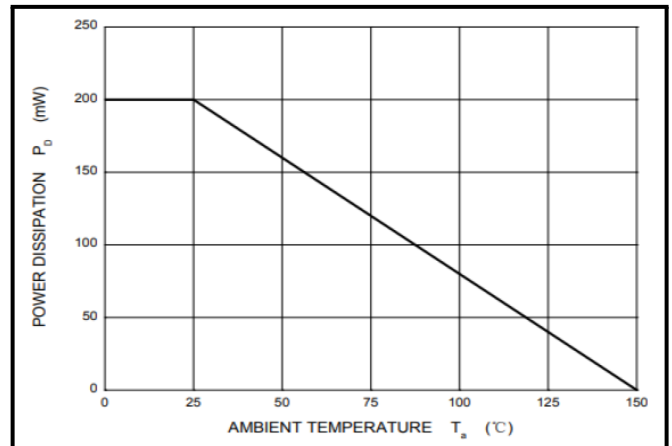
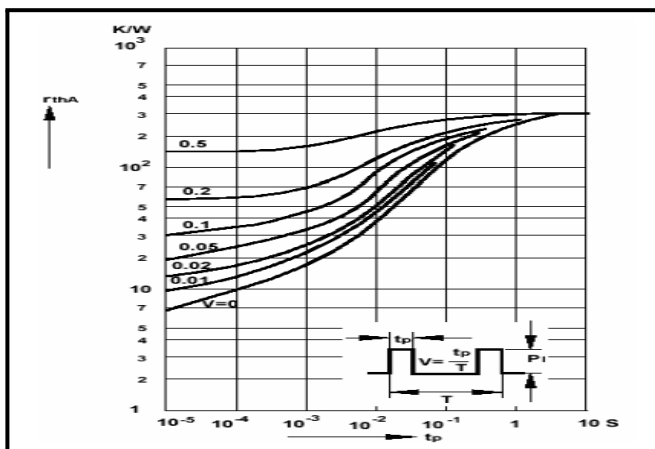


Fig 4:Pulse thermal resistance versus pulse duration

Fig 5:Dynamic resistance versus Zener current



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Fig 6: Capacitance versus Zener voltage

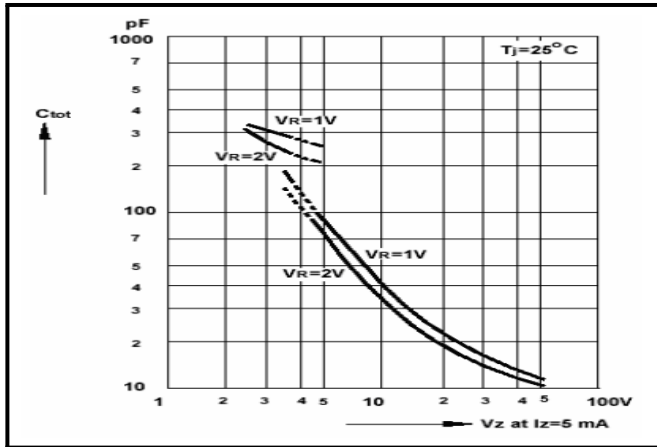


Fig 7: Dynamic resistance versus Zener current

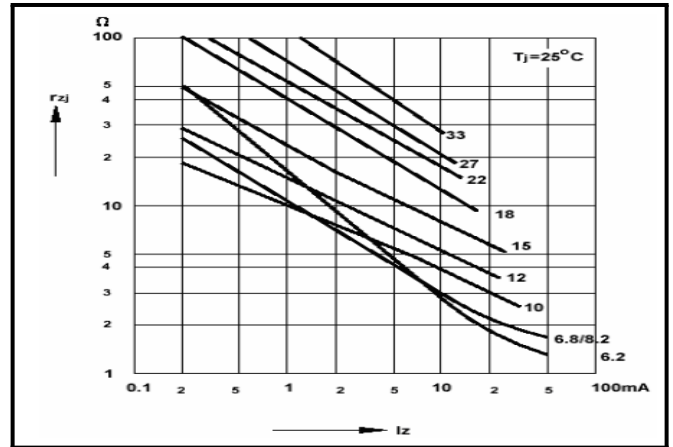


Fig 8: Dynamic resistance versus Zener current

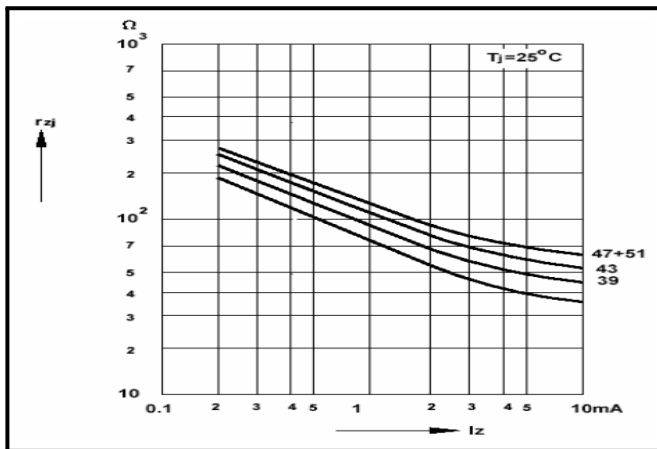


Fig 9: Thermal differential resistance versus Zener voltage

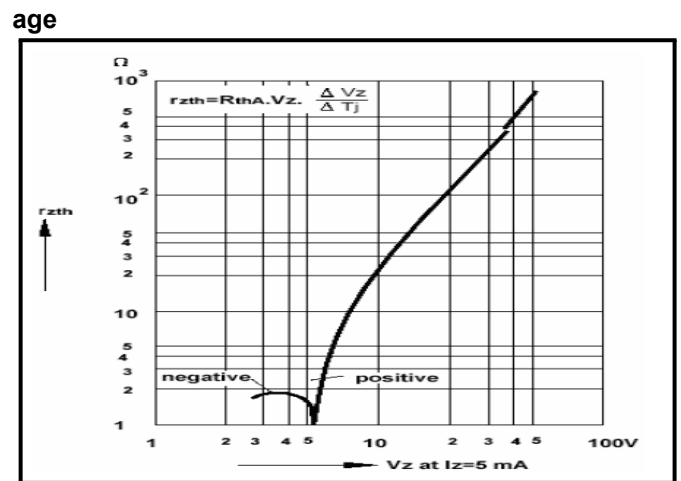


Fig 10: Dynamic resistance versus Zener voltage

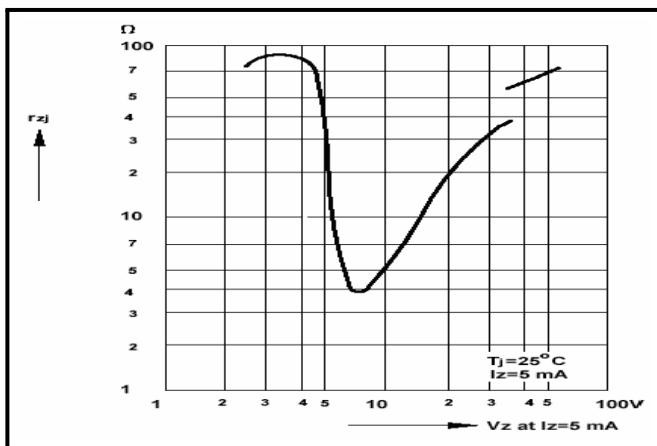
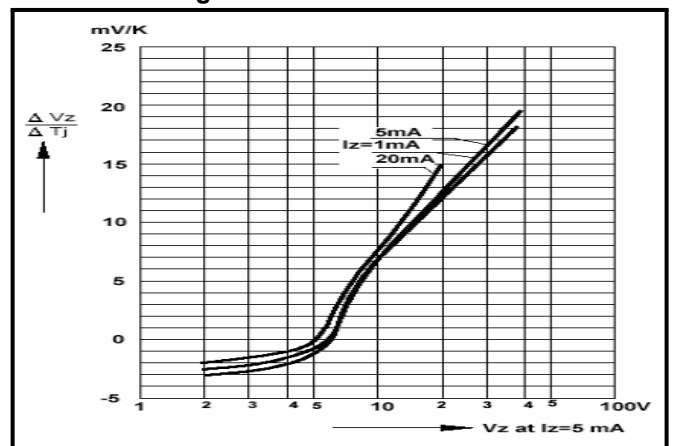


Fig 11: Temperature dependence of Zener voltage versus Zener voltage



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Zener Diode

Fig 12: Temperature dependence of Zener voltage versus Zener voltage

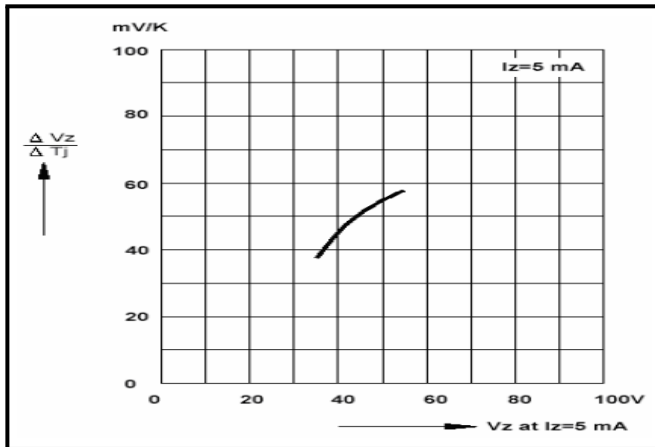


Fig 13: Change of Zener voltage versus junction temperature

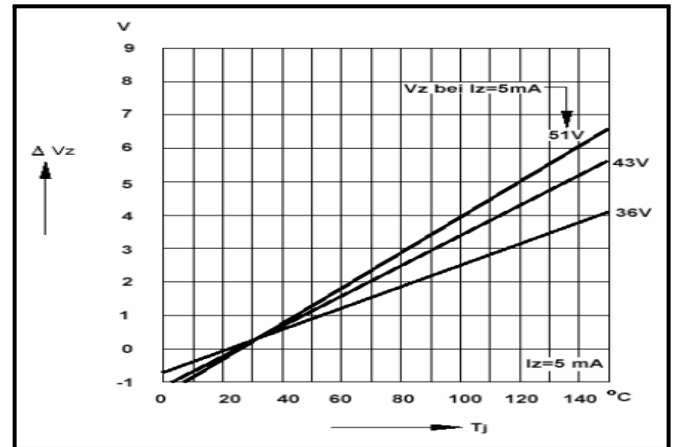


Fig 14: Change of Zener voltage versus junction temperature

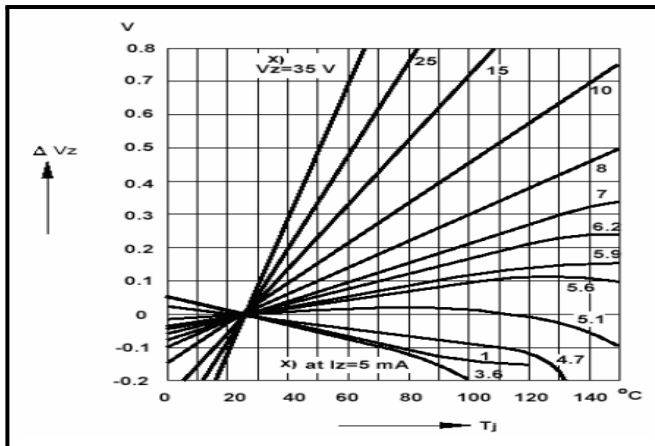
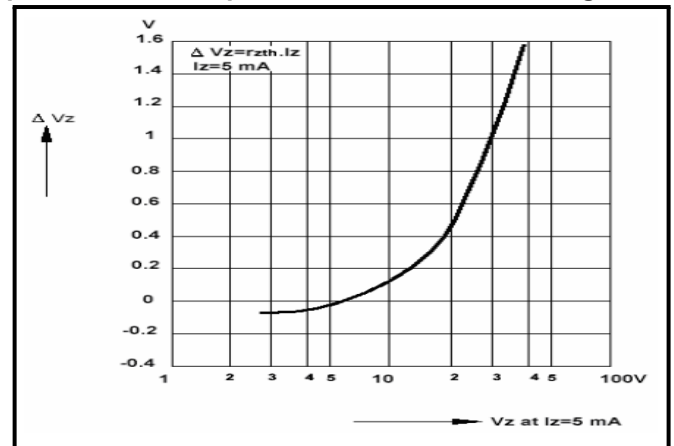


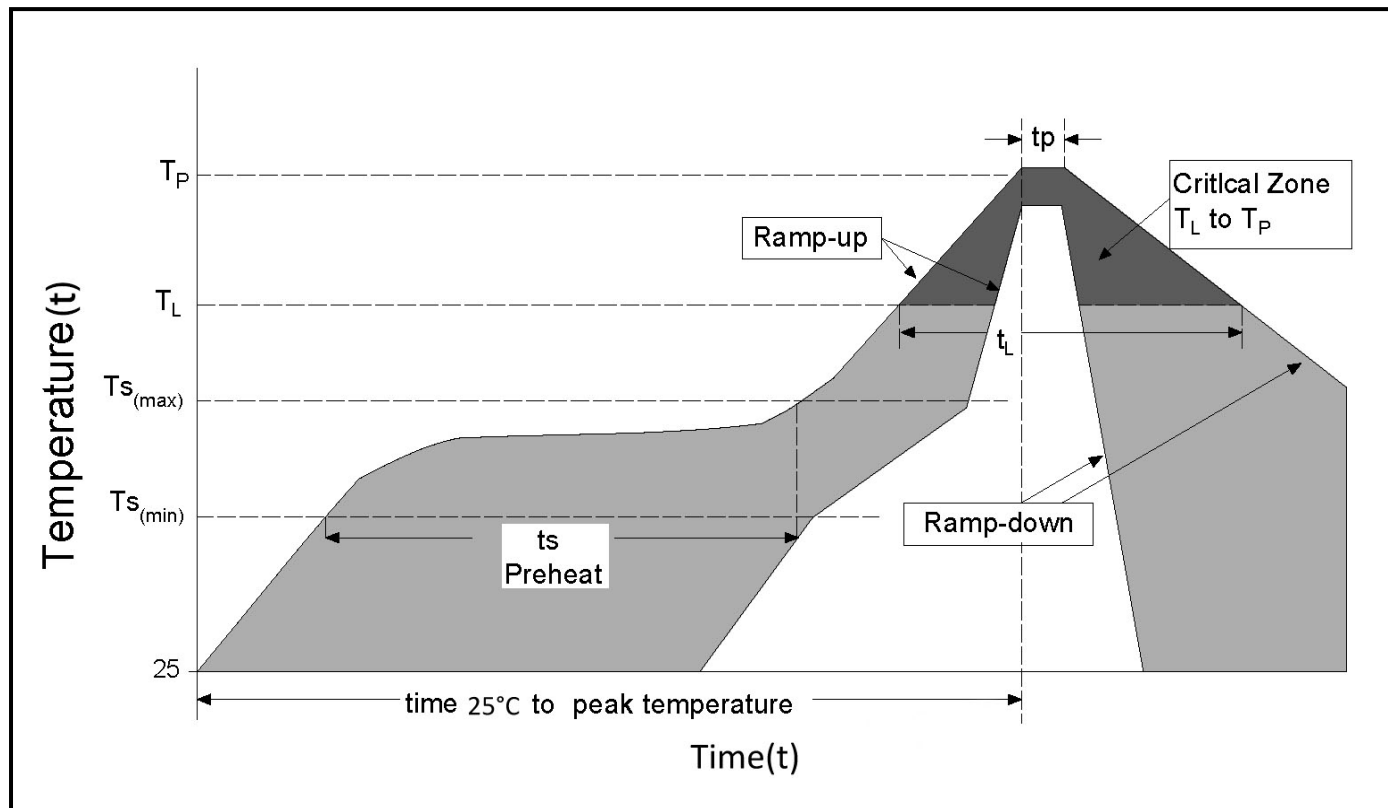
Fig 15: Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



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Zener Diode

Soldering Parameters



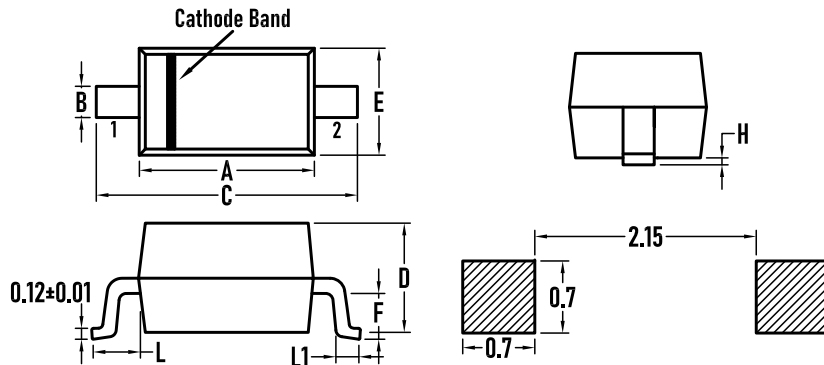
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min (Ts(min))	150°C
	- Temperature Max (Ts(max))	200°C
	- Time (min to max) (ts)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T _L) to peak)		3°C/second max
T _S (max) to T _L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquidus)	217°C
	- Time (t _L)	60 -150 secs
Peak Temperature (T _P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t _p)		20 -40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C



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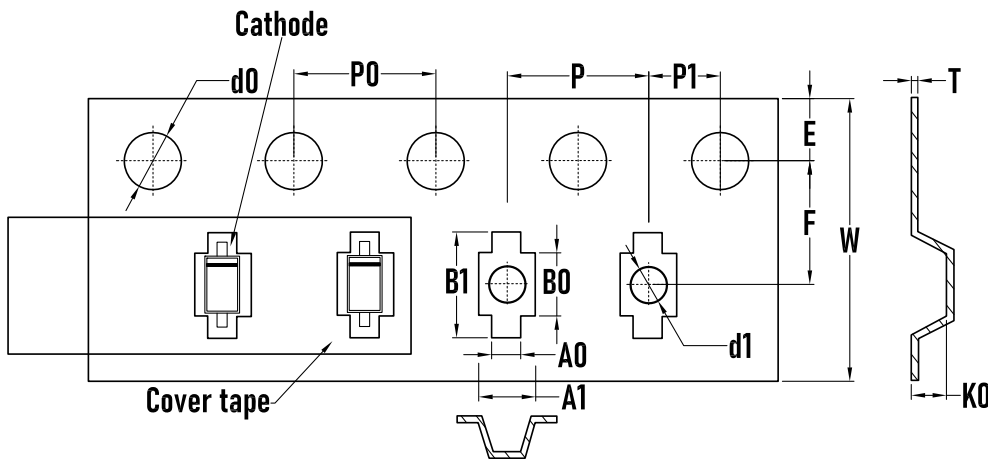
Zener Diode

Package Information - SOD-323



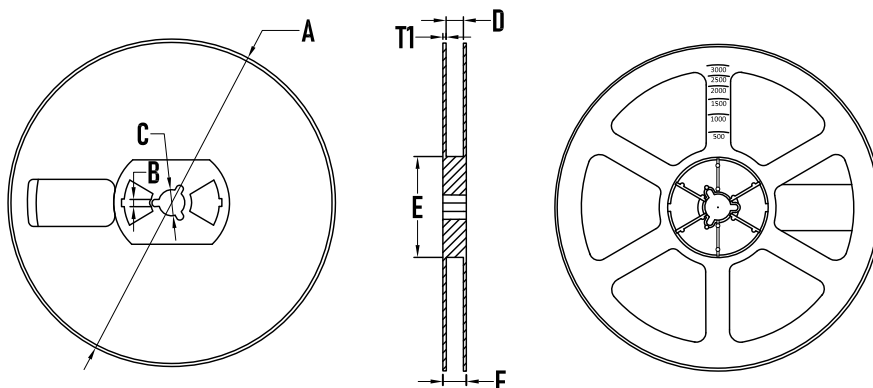
SYMBOL	MILLIMETER		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D	—	1.000	—	0.039
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Packaging Tape - SOD-323



SYMBOL	MILLIMETER
A0	0.80±0.10
A1	1.48±0.10
B0	1.80±0.10
B1	3.00±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.05±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.25 ±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

Revision: 2022-Jan-1-A

